

CLAIMS

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1. A method for immobilizing a DNA onto a support, the method comprising contacting a DNA with a support in a buffer containing at least one substance selected from the group consisting of morpholine, a morpholine derivative, a salt thereof and a carbonate.

2. The method according to claim 1, wherein the morpholine derivative is an N-alkylmorpholine substituted with a C1-3 alkyl group.

3. The method according to claim 1, wherein the salt of morpholine or the morpholine derivative is a salt selected from the group consisting of a salt with a mineral acid, a salt with an organic acid and a salt with a fatty acid.

4. The method according to claim 1, wherein the carbonate is a salt selected from the group consisting of a sodium salt, a potassium salt, a magnesium salt, an ammonium salt and a triethylamine salt.

5. The method according to claim 1, wherein the buffer contains at least one substance selected from the group consisting of morpholine, a morpholine derivative and a salt thereof in combination with at least one carbonate.

6. The method according to any one of claims 1 to 5, wherein the pH of the buffer is 7 to 11.

B (7.) The method according to ~~any one of claims~~ 1 to 6, wherein the concentration of at least one substance selected from the group consisting of morpholine, a morpholine derivative, a salt thereof and a carbonate in the buffer is 10 to 500 mM.

B (8.) The method according to ~~any one of claims~~ 1 to 7, wherein the DNA is an oligonucleotide, a polynucleotide or a derivative thereof.

10 B (9.) The method according to ~~any one of claims~~ 1 to 8, wherein the concentration of the DNA in the buffer is 0.1 to 2.0 mg/ml.

10 B 10. The method according to ~~any one of claims~~ 1 to 9, wherein the buffer further contains at least one salt.

15 B 11. The method according to ~~any one of claims~~ 1 to 10, wherein the buffer further contains at least one surfactant.

B 12. The method according to ~~any one of claims~~ 1 to 11, wherein the support is made from glass or quartz, or is a material prepared by treating the surface of glass or quartz.

20 13. The method according to claim 12, wherein the surface is treated with a silane coupling agent or a polycation.

25 B 14. The method according to ~~any one of claims~~ 1 to 13, wherein the DNA is immobilized without denaturation.

15. The method according to claim 14, wherein the DNA is a double-stranded DNA.

✓ 16. A method for immobilizing a DNA onto a support, the method comprising contacting a DNA with a support in a buffer containing at least one surfactant.

17. The method according to claim 16, wherein the surfactant is selected from the group consisting of a non-ionic surfactant, an anionic surfactant and an amphoteric surfactant.

10 18. The method according to claim 17, wherein the surfactant is selected from the group consisting of sucrose monocaprate, sucrose monolaurate and digitonin.

15 19. The method according to any one of claims 16 to 18, wherein the buffer contains at least one substance selected from the group consisting of morpholine, a morpholine derivative, a salt thereof and a carbonate.

20. The method according to claim 19, wherein the pH of the buffer is 7 to 11.

B 20 21. The method according to claim 19 ~~or 20~~, wherein the concentration of at least one substance selected from the group consisting of morpholine, a morpholine derivative, a salt thereof and a carbonate in the buffer is 10 to 500 mM.

25 22. The method according to ~~any one of claims 16 to 21~~, wherein the DNA is an oligonucleotide, a

polynucleotide or a derivative thereof.

23. The method according ~~any one of claims 16 to 22~~, wherein the concentration of the DNA in the buffer is 0.1 to 2.0 mg/ml.

24. The method according to ~~any one of claims 16 to 23~~, wherein the buffer further contains at least one salt.

25. The method according to ~~any one of claims 16 to 24~~, wherein the support is made from glass or quartz, or is a material prepared by treating the surface of glass or quartz.

26. The method according to claim 25, wherein the surface is treated with a silane coupling agent or a polycation.

27. The method according to ~~any one of claims 16 to 26~~, wherein the DNA is immobilized without denaturation.

28. The method according to claim 27, wherein the DNA is a double-stranded DNA.

29. A material onto which a DNA is immobilized, which is prepared according to the method defined by ~~any one of claims 1 to 28~~.

30. The material according to claim 29, wherein the DNA is a double-stranded DNA.

31. A method for detecting a target nucleic acid, the method comprising detecting a target nucleic acid by

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36. A buffer for immobilizing a DNA, which contains at least one surfactant.

37. A buffer for immobilizing a DNA, which contains at least one substance selected from the group consisting of morpholine, a morpholine derivative, a salt thereof and a carbonate as well as at least one surfactant.

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